REMARKS

In view of the 35 U.S.C. 112 rejections of the claims, a new set of claims 25-30 has been presented to more particularly point out the invention.

In the prior art, as illustrated in Fig. 2, a wavelength channel, for example, $\lambda 1$, is divided by a power divider T, and then transmitted to a working matrix AS1 and a redundant protection matrix SS1. The outputs of these two matrices are monitored by monitor MON and, if necessary, the output of the protection matrix SS1 might be switched by switch SW. As described in the specification, the use of the power divider T introduces an unacceptable insertion loss, and the use of the extra redundant protection matrix SS1 represents an unacceptable extra equipment cost and increased circuit complexity.

New main claim 25 recites, as illustrated in Fig. 3, that a plurality of switching matrices S1 ... SN are provided for switching wavelength channels $\lambda 1$ ... λN. Each switching matrix is operative for switching a wavelength channel of only a single wavelength. For example, switching matrix S1 only switches wavelength channel $\lambda 1$. Each single wavelength channel is switchable by only a single switching matrix. Thus, wavelength channel $\lambda 1$ is only switched by switching matrix S1. These recitations are in contrast with the prior art of Fig. 2, wherein wavelength channel $\lambda 1$ is switched by "two" switching matrices AS1 and SS1.

In order to avoid the use of a power divider and an extra redundant protection matrix, the present invention, as clearly recited in claim 25, applies two wavelength channels, for example, $\lambda 1$ and $\lambda 2$, having two wavelengths that are different, but modulated with the same information, to different respective switching matrices, for example, S1 and S2. Wavelength channel $\lambda 1$ is not split by a power divider. No extra switching matrix is provided for each wavelength. Instead, switching

matrix S1 can transmit the information to the target node. If switching matrix S1 fails, then switching matrix S2 (which carries the same information) can complete the transmission.

Turning to the prior art, Feuer is not relevant, because it is not concerned with implementing data transmission protection. Feuer describes a WDM multi-cast server arrangement in which a multi-cast group is changed using a wavelength selective cross-bar switch. There is no disclosure of any switching matrices used within the various nodes, except for the wavelength selective cross-bar switch in the multi-cast server. For example, there is no disclosure that each node (e.g., 301, 303) comprises a number of optical switching matrices, one for each wavelength.

Furthermore, while the nodes are described as dropping two wavelengths, these two wavelengths are not modulated with the same information. By contrast, one of the wavelengths carries multi-cast data, and the other wavelength carries uni-cast data. The skilled person would not be motivated to consider protecting information carried by this network using different wavelength channels as the only protection considered is that inherent in the ring architecture of the network. The focus of Feuer, by contrast, is directed at the problem of alleviating the transmission bottleneck at the sending server when multi-casting. This problem is unrelated to applicant's claimed subject matter.

Graves describes a protection arrangement for an optical switching system including a number of wavelength selective optical switching matrices. Graves describes a complicated arrangement of switching matrices and "additional" protection switches. For example, an additional switching matrix 14 is used to protect the various wavelength specific switch ing matrices 12A-12M in Fig. 2. As stated above, one aspect of the present invention is to eliminate such additional protection switches.

Graves is only concerned with the architecture of the switching arrangement and how to provide protection for failures within the switching arrangement; but not the overall network. For example, there is no disclosure of a start node, a target node, or intermediate nodes within an optical communications network. There is no disclosure of how protection of channels transmitted across such a network might be implemented. More importantly, the inclusion of "additional" switching matrices teaches against the approach of the present invention which utilizes only a single wavelength selective switching matrix for each wavelength channel.

There does not appear to be any motivation or suggestion to combine the teachings of Feuer and Graves. Nevertheless, even if they were combined, they teach the addition of switching matrices to implement protection, rather than minimizing the number of switching matrices used, as taught in the present application. Thus, any combination of Feuer and Graves teaches against the approach claimed in main claim 25, and it is therefore submitted that this claim is not obvious in view of these citations.

It follows that dependent claims 26-30 are also novel and non-obvious in view of Feuer and Graves.

It is believed that this application, as now amended, is in order for allowance.

Wherefore, a favorable action is earnestly solicited.

Respectfully submitted,

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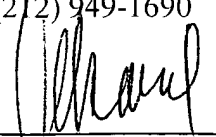

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